

11/17/00

17

**UTILITY PATENT APPLICATION TRANSMITTAL
(Small Entity)**

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.
KEPM5001MPTotal Pages in this Submission
50**TO THE ASSISTANT COMMISSIONER FOR PATENTS**Box Patent Application
Washington, D.C. 20231

Transmitted herewith for filing under 35 U.S.C. 111(a) and 37 C.F.R. 1.53(b) is a new utility patent application for an invention entitled:

"ARCHITECTURAL TRIM PRODUCT AND METHOD OF MOUNTING"

and invented by:

Peter M. KeddellJC675 U.S. PTO
09/714322
11/16/00

If a CONTINUATION APPLICATION, check appropriate box and supply the requisite information:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: _____

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Enclosed are:

Application Elements

1. ☒ Filing fee as calculated and transmitted as described below
2. ☒ Specification having 28 pages and including the following:
 - a. ☒ Descriptive Title of the Invention
 - b. ☐ Cross References to Related Applications (if applicable)
 - c. ☐ Statement Regarding Federally-sponsored Research/Development (if applicable)
 - d. ☐ Reference to Microfiche Appendix (if applicable)
 - e. ☒ Background of the Invention
 - f. ☒ Brief Summary of the Invention
 - g. ☒ Brief Description of the Drawings (if drawings filed)
 - h. ☒ Detailed Description
 - i. ☒ Claim(s) as Classified Below
 - j. ☒ Abstract of the Disclosure

UTILITY PATENT APPLICATION TRANSMITTAL (Small Entity)

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Application Elements (Continued)

3. ☒ Drawing(s) (when necessary as prescribed by 35 USC 113)
- a. ☒ Formal b. ☐ Informal Number of Sheets 7
4. ☒ Oath or Declaration
- a. ☒ Newly executed (original or copy) ☐ Unexecuted
- b. ☐ Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional application only)
- c. ☒ With Power of Attorney ☐ Without Power of Attorney
- d. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application,
see 37 C.F.R. 1.63(d)(2) and 1.33(b).
5. ☐ Incorporation By Reference (usable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied
under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby
incorporated by reference therein.
6. ☐ Computer Program in Microfiche
7. ☐ Genetic Sequence Submission (if applicable, all must be included)
- a. ☐ Paper Copy
- b. ☐ Computer Readable Copy
- c. ☐ Statement Verifying Identical Paper and Computer Readable Copy

Accompanying Application Parts

8. ☒ Assignment Papers (cover sheet & documents)
9. ☒ 37 CFR 3.73(b) Statement (when there is an assignee)
10. ☐ English Translation Document (if applicable)
11. ☐ Information Disclosure Statement/PTO-1449 ☐ Copies of IDS Citations
12. ☐ Preliminary Amendment
13. ☒ Acknowledgment postcard
14. ☒ Certificate of Mailing
- ☐ First Class ☒ Express Mail (Specify Label No.): EI855911048

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Accompanying Application Parts (Continued)

15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. ☒ Small Entity Statement(s) - Specify Number of Statements Submitted: 2
17. ☐ Additional Enclosures (please identify below):

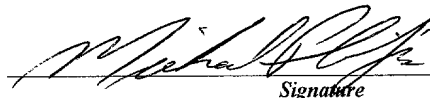
Fee Calculation and Transmittal

CLAIMS AS FILED

For	#Filed	#Allowed	#Extra	Rate	Fee
Total Claims	20	- 20 =	0	x \$9.00	\$0.00
Indep. Claims	5	- 3 =	2	x \$40.00	\$80.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
BASIC FEE					\$355.00
OTHER FEE (specify purpose) <u>Assignment</u>					\$40.00
TOTAL FILING FEE					\$475.00

- ☒ A check in the amount of **\$475.00** to cover the filing fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge and credit Deposit Account No. **15-0490** as described below. A duplicate copy of this sheet is enclosed.
- ☐ Charge the amount of _____ as filing fee.
- ☒ Credit any overpayment.
- ☒ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.
- ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Dated: 16 Nov 2000


Signature

Michael R. Philips
Olive & Olive, P.A.
P.O. Box 2049
Durham, NC 27702

cc: **Peter M. Keddell**

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) AND 1.27 (b)) - INDEPENDENT INVENTOR**

Docket No.
KEPM5001MP

Serial No.

Filing Date

Patent No.

Issue Date

Applicant/ **Peter M. Keddell**
Patentee:

Invention: **ARCHITECTURAL TRIM PRODUCT AND METHOD OF MAKING**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled above and described in:

- ☒ the specification to be filed herewith.
☐ the application identified above.
☐ the patent identified above.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☐ No such person, concern or organization exists.
☒ Each such person, concern or organization is listed below.

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities (37 CFR 1.27)

FULL NAME **K Trim, Inc.**

ADDRESS **4709 Coral Berry Circle, Apex, North Carolina 27502**
☐ Individual ☒ Small Business Concern ☐ Nonprofit Organization

FULL NAME

ADDRESS

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME

ADDRESS

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME

ADDRESS

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF INVENTOR Peter M. Keddell

SIGNATURE OF INVENTOR 

DATE: 11/16/00

NAME OF INVENTOR _____

SIGNATURE OF INVENTOR _____

DATE: _____

NAME OF INVENTOR _____

SIGNATURE OF INVENTOR _____

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NAME OF INVENTOR _____

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NAME OF INVENTOR _____

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NAME OF INVENTOR _____

SIGNATURE OF INVENTOR _____

DATE: _____

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) AND 1.27 (c)) - SMALL BUSINESS CONCERN**

Docket No.
KEPM5001MP

Serial No.

Filing Date

Patent No.

Issue Date

Applicant/ **Peter M. Keddell**

Patentee:

Invention: **ARCHITECTURAL TRIM PRODUCT AND METHOD OF MAKING**

I hereby declare that I am:

- ☐ the owner of the small business concern identified below:
☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN: **K Trim, Inc.**ADDRESS OF CONCERN: **4709 Coral Berry Circle, Apex, North Carolina 27502**

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 37 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the above identified invention described in:

- ☒ the specification filed herewith with title as listed above.
☐ the application identified above.
☐ the patent identified above.

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed on the next page and no rights to the invention are held by any person, other than the inventor, who could not qualify as an independent inventor under 37 CFR 1.9(c) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ no such person, concern or organization exists.
☐ each such person, concern or organization is listed below.

FULL NAME

ADDRESS

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME

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☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME

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☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING:

Peter M. Keddell

TITLE OF PERSON SIGNING

OTHER THAN OWNER:

President

ADDRESS OF PERSON SIGNING:

4709 Coral Berry CircleApex, North Carolina 27502

SIGNATURE:



DATE:

11/16/00

APPLICATION FOR LETTERS PATENT

OF

PETER M. KEDDELL

FOR

**ARCHITECTURAL TRIM PRODUCT
AND METHOD OF MOUNTING**

ATTORNEY DOCKET NO. KEPM5001MP

ARCHITECTURAL TRIM PRODUCT AND METHOD OF MOUNTING

FIELD OF THE INVENTION

5 The present invention relates to the field of building construction materials, and more particularly to building architectural trim products.

BACKGROUND OF THE INVENTION

10 The architectural distinctiveness of a house or other building is often attributable to the trim that provides a finishing touch to an otherwise common shape. Trim distinctiveness has, through the years, evolved from Greek, Roman, Gothic, and Victorian to contemporary and modernistic. Each style has various characteristic details and shapes that sets it apart from the others.

15 Parallel changes have come about through the development of building materials, especially those materials that form the visible surface of a house or building. Common exterior surface materials in use today are wood, brick, vinyl, and aluminum. Vinyl and aluminum have the advantage of being supplied from the factory with its final color applied, and need no more than minimum maintenance. With each of these exterior surface materials,
20 the trim portions of the building, e.g., the crosshead piece over a door or window, the fascia below the roofline, the transition frieze, or molding, between a wall and ceiling, are almost always made of wood. The reason for wood being used for this purpose is that wood can be efficiently formed into attractive shapes that are distinctive to a particular style. Forming
25 similar shapes of plastic requires complex molds, and shapes of metal or concrete have traditionally been heavy. Even where the exterior siding of a building is made of vinyl or aluminum, modern siding materials that are mass produced with their surface colors applied at the factory, the trim has generally been made of wood. However, wood has the drawback of requiring periodic maintenance in the form of scraping and painting to prevent degradation.

One known exception is a line of architectural trim products made of plastic resin from Style-Mark, Inc. of Archbold, Ohio. These known plastic trim products require substantial molding investment and capacity to produce, and involve either a substantial inventory or a significant delivery delay to obtain. In addition, in order to keep inventory within reason, these trim products are available in white only; if another color is desired, the parts must be painted at the construction site.

A process and apparatus exists for forming factory painted aluminum sheet into rain gutters. The aluminum is supplied in roll form and is drawn as a sheet through a mechanism having complementary convex and concave rollers to form the profile gutter shape. Forming aluminum rolled sheet into gutters at the site of installation has the advantage of permitting a seamless, continuous length of gutter to be installed across the entire edge of a house's roof, without the need to transport long gutter sections, e.g. 10 meter (39 feet), over the roads to the building site.

While forming aluminum sheet into gutters is known, the objective has been to achieve long, continuous sections, as described above. Furthermore, gutters are typically of a simple and functional cross sectional contour with an upwardly open channel. In the design of architectural trim products, a degree of flexibility is necessary since the style of the building will dictate the style and the width of the trim.

Therefore, it is an object of the present invention to provide an architectural trim product that can be economically produced in a variety of shapes and styles.

It is another object of the present invention to provide an architectural trim product that can be produced in a variety of colors without the need for painting at the construction site.

It is a further object of the present invention to provide an architectural trim product that does not require periodic maintenance.

5 These and other objects of the present invention will become apparent through the disclosure of the invention to follow.

SUMMARY OF THE INVENTION

10 The present invention provides an architectural trim product fabricated of sections formed out of aluminum sheet material. The sections have a cross sectional profile shape that includes curved portions and right angle bends. The sections are optionally used as a fascia, a frieze in lengths matching the length of a wall-to-soffit joint, crosshead trim over a window or door or other trim uses. In the crosshead application, the horizontal section piece is mitered at
15 each end and the ends are each closed with a short piece of similar miter-cut section, giving the appearance of a three-dimensional solid. An attaching bolster, or stiffening block, is formed in a shape to fit behind the contour of the trim section to support it to a wall while minimizing the tendency of the aluminum to bend. In all forms, the method of mounting the trim product of the invention to the building structure provides secure attachment with no visible nails, screws,
20 or adhesive.

 The sections of architectural trim are made from aluminum sheet pieces that have been cut to length and then bent. The curves are formed first by pressing the sheet between two shaped components, for example pipe segments. After forming the curves, the right-angle
25 bends are made on a conventional brake, or the like. An alternate forming process uses a set of matching rollers to form the aluminum sheet into a contour-shaped trim piece.

BRIEF DESCRIPTION OF THE DRAWINGS

In order for the invention to become more clearly understood it will be disclosed in greater detail with reference to the accompanying drawings, in which:

5

Figure 1 is a front elevation view of a building wall having a window over which a crosshead architectural trim product according to the invention is mounted.

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Figure 2 is a perspective view of a section of formed sheet material for making an architectural trim product of the invention.

Figure 3 is a perspective view of the crosshead trim product according to Figure 1.

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Figure 4 is a side elevation view of the architectural trim product according to Figure 3, further showing a bolster support piece therewithin.

Figure 4A is a perspective view of the bolster support piece of Figure 4.

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Figure 4B is a side elevation view of the architectural trim product according to Figure 3, further showing a J-hook and a block as mounting pieces therewithin.

Figure 5 is a side elevation view of a second embodiment of the invention as mounted to a building wall with a mounting clip.

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Figure 5A is a side elevation view of the embodiment of Figure 5 showing the steps involved in mounting the trim product to the mounting clip.

Figure 5B is a side elevation view of an alternate shape trim product of the embodiment of Figure 5.

5 Figure 6 is a side elevation view of a portion of a building to which a frieze with a concave curve portion according to the invention has been mounted.

10 Figure 6A is a side elevation view of a portion of a building to which a frieze with a convex curve according to the invention has been mounted.

 Figure 6B is a side elevation view of a portion of a building to which a frieze with concave and convex curve portions according to the invention has been mounted.

15 Figure 6C is a side elevation view of a portion of a building to which a frieze with a convex curve according to the invention has been mounted by means of a J-hook.

 Figure 7 is a front elevation view of a portion of a building roofline to which a fascia trim product according to the invention is mounted.

20 Figure 7A is an enlarged cross sectional view taken in the direction of line 7A – 7A of Figure 7 and depicting a fascia of a first contour.

 Figure 7B is an enlarged cross sectional view taken in the direction of line 7A – 7A and depicting a fascia of a second contour.

25 Figure 8 is an end elevation view of a press die set having curved and angular portions for creating curved and angular contour portions in a sheet of bendable materials.

Figure 9 is a perspective view of a pair of engageable die rollers having surfaces formed with curved and angular portions for creating curved and angular contour portions in a sheet of bendable material.

5

DESCRIPTION OF THE PREFERRED EMBODIMENT

The architectural trim product of the present invention is an economical and versatile component for enhancing the appearance of the interior or exterior of a building. The trim product can be formed to emulate the appearance of most of the building trim products that are currently available in wood or molded plastic resin, in an efficient and attractive way. Examples of types of trim products to which the present invention pertains include, but are not limited to, crosshead trim over windows and doors, friezes between an exterior wall and an adjacent soffit, cove molding between an interior wall and a ceiling, and fireplace mantles. In all embodiments of the invention, the component that will remain in view covers the wall-mounting component and any fasteners.

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Referring now to Figure 1, a wall of building 10 is illustrated with typical window 12 located therein. Window 12 may be of the type having a plurality of individual frames (as shown) or of the type with a single frame for each of its upper and lower sections. A first side trim 16a is mounted in vertical orientation on the left side of window 12 and a second side trim 16b is mounted similarly on the right side thereof. Side trims 16a and 16b preferably are formed of a bendable sheet material. A crosshead 18 is mounted above window 12 and extends laterally to slightly overlap each of side trims 16a and 16b for architectural interest. The particular shape of crosshead 18 as illustrated is stepped from its bottom surface (as shown), of length L_1 , to its top surface of length L so that its top surface overhangs side trims 16a and 16b by a greater amount than does its bottom

surface. Each end of crosshead 18 is closed by a short piece of the same profile shape of which the central portion of crosshead 18 is made with the central portion and the end portions cut at a complementary shape with their mutual joint sealed with a pliant material, for example caulking compound.

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Figure 2 illustrates, in perspective view, a length of formed sheet material 20 that has been bent to create a desired profile for being assembled to make crosshead 18 as described above. Formed sheet 20 is formed by making a number of curved and square bends in an elongate sheet of material of the type that is able to retain a shape to which it is bent. A sheet material that has been found to be satisfactory is aluminum sheet of 0.56 mm (0.022 inch) thickness. Such aluminum sheet material is available with one surface painted during the manufacturing process, and is available from a variety of suppliers, for example, Aluminum Corporation of America. Alternate materials that provides the requisite characteristics of retaining a bent shape are, for example, copper sheet and galvanized steel sheet. Formed sheet material 20 comprises a series of linear bends oriented parallel to the elongate linear edges of sheet 20, including vertically oriented rear lip 22, horizontally oriented top panel 24, vertically oriented top face 26, horizontal return 28, curved portion 30, vertically oriented middle face 34, horizontally oriented middle return 36, vertically oriented skirt 40, horizontally oriented bottom return 42, and angularly oriented grip 44. As will be apparent to those skilled in the trade, formed sheet material 20 may incorporate various arrangements of right angle, curved, and angled bends. Any curved portions formed may be either concave or convex and either circular or another form of curve, e.g. parabolic. Additionally, more than one curved portion may be formed to achieve a different appearance.

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Referring now to Figure 3, crosshead 18 is shown in perspective view including front panel 58 and end cap 60. Length L of crosshead 18 is substantially greater than width l thereof. Front panel 58 and end cap 60 are each cut from a length of formed sheet material 20 (see Figure 2). Front panel 58 and end cap 60 are cut along their mating edges at complementary miter angles to be assembled to each other and form a three-dimensional component. For mounting crosshead 18 over window 12, as illustrated in Figure 1, the opposite end of front panel 58 and a second end cap (not shown) are similarly prepared and assembled. Upper tab 60a and lower tab 60b are configured to securely engage the mating end of front panel 58. When end cap 60 is assembled to front panel 58, a weather resistant sealant, e.g. silicone caulk, is applied to the rear of the mating edge, preferably in a color to match the exposed surfaces of crosshead 18.

Figures 4 and 4B show side elevation views of alternate means of mounting a length of formed sheet 20 to a building wall 62. Figure 4 shows bolster 50 fastened to wall 62 by multiple fasteners N, such as nails, screws, or adhesive. Bolster 50 is preferably formed in a profile shape that is established to substantially follow the interior profile of formed sheet material 20. Bolster 50, in the preferred embodiment, is made by cutting a sheet of bendable material, e.g. aluminum, to an appropriate profile shape. Preferably, the profile shape of bolster 50 is cut in two mirror image flaps 56 and 57 that are separated by a flat area extending from extended top tab 52 to extended bottom tab 54, as shown in perspective in Figure 4A. Bolster 50 serves to mount formed sheet 20 to wall 62 and also to minimize bending of formed sheet 20 if it is hit by an object. Bolster 50 is secured to wall 62 with a fastener N through top tab 52 and a second fastener N through bottom tab 54. Top fastener N is hidden by rear lip 22. Second fastener N through bottom tab 54 will be subsequently hidden by exterior siding panels (not shown) when they are assembled to wall 62. Thus, the finished trim product will have no visible means of attachment to wall 62. The parallel profile provision of two flaps 56 and 57 enhances the resistance of

bolster 50 to bending. Grip 44 (see Figure 4) maximizes the security of mounting formed sheet 20 to bolster 50 through pressure and sharp edge engagement, with a sharp edge existing at the bottom of rear lip 22 to engage the top portion of bolster 50 and a sharp edge at the end of grip 44 to engage the bottom portion of bolster 50.

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Referring now to Figure 4B, formed sheet 20 is shown mounted to wall 62 by means of block 64 and J-hook 66. Block 64 is a substantially elongate member having a substantially rectangular cross section, for example wood or plastic foam. J-hook 66 is formed of a strip of bendable material, e.g., aluminum, that has been bent in the general shape of a "J" so that when the upper straight portion thereof is fastened to wall 62 by fastening means N, for example nails or screws, the lower portion of the "J" is facing upwards. Block 64 is fastened to wall 62 by fastening means N at a height so that when rear lip 22 of formed sheet 20 is placed in the lower portion of J-hook 66, and the bottom of formed sheet 20 is brought toward wall 62, grip 44 grippingly engages the bottom surface of block 64 to secure formed sheet 20 in place.

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Referring now to Figure 5, a third embodiment of the invention is illustrated in side elevation view. A mounting clip 70 is formed with a substantially planar central portion, a bottom lip 72, and a top lip 74. The central planar portion of mounting clip 70 is affixed to wall 62 by any convenient means, e.g. fasteners N, and bottom lip 72 and top lip 74 are not anchored. Bottom lip 72 is formed with its lowermost part spaced from wall 62. Top lip 74 is formed with its uppermost part slightly spaced from wall 62 with an angularly oriented planar portion leading toward its uppermost part.

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Continuing with Figure 5, face trim 76 is formed to mount onto mounting clip 70. Face trim 76 has bottom hook 78, formed to engage bottom lip 72 of mounting clip 70. Face trim 76 also has top hook 80, formed to engage top lip 74 of mounting clip 70.

The assembly of face trim 76 to mounting clip 70 is illustrated in sequential steps in Figure 5A. After bottom hook 78 of face trim 76 has been placed in engagement with bottom lip 72 of mounting clip 70 (see Figure 5), top hook 80 is placed against the angled portion of top lip 74 as seen as dashed line A. Pressure is exerted against top hook 80 in the general direction indicated by arrow X, causing top hook 80 to bend upwardly relative to the body of face trim 76 (see Figure 5A), moving from position A (dashed lines) to position B (dashed lines). As top hook 80 approaches the uppermost end of top lip 74, its extreme end snaps over and into place between top lip 74 and wall 62 as indicated at position C (solid lines). Once in this mounted position, depending on the length of top hook 80 that enters behind top lip 74, removal of face trim 76 is difficult, if not impossible, without substantial distortion.

Referring now to Figure 5B, a further profile shape of this second embodiment of the invention is shown. In this profile shape, mounting clip 70 is formed similarly to that discussed and shown above, but face trim 76' has a more exaggerated profile. Top hook 80' and bottom hook 78' securely hold face trim 76' to mounting clip 70. In this manner, differing architectural styles can be accommodated using the mounting principles described above.

The face trim products shown in Figures 5, 5A, and 5B and described above are adaptable for a variety of interior and exterior construction components. In addition to the exterior components of crosshead, fascia, and frieze described in relation to the first embodiments of the present invention, this second embodiment is useful as crown molding, window or door casings, baseboards, and mantle pieces.

As briefly described above, a frieze, being a building component that is installed as a transitional trim between a vertical wall and a ceiling or soffit, is typical of a further embodiment of the present invention. A side elevation view of a frieze 88, mounted between an exterior wall of building 10 and a soffit 84, is illustrated in Figure 6. Frieze 88 has single concave curve section 90 and a number of alternating inwardly and outwardly oriented right angle bends. Anchor 92 is formed at an upper end of frieze 88 and configured to engage an adjacent edge of soffit 84. The lower edge of frieze 88 is typically secured to building wall 10 by fastening means N prior to the application of exterior siding. Stiffening block 95 is made to substantially conform to the contour of and provide reinforcement for frieze 88. Stiffening block 95 is preferably formed of foamed plastic resin.

Figure 6A illustrates a side elevation view of a frieze 94 which is a variation of the frieze contour shown in Figure 6 and described above. Frieze 94 comprises a convex curve section 96, as differing from concave curve section 90 described above. Stiffening block 95a is similar to stiffening block 95 described above.

Figure 6B illustrates a side elevation view of a frieze 98 that incorporates concave curve section 100 and convex curve section 102. Additional variations, for example, curved sections positioned at the center or the lower end of the frieze, multiple concave or multiple convex sections, and parabolic or elliptical curves are also obtainable. Stiffening block 95b is similar to stiffening block 95 described above.

Figure 6C depicts frieze 104 which is similar in contour to frieze 94 of Figure 6A. Frieze 104 is formed with an anchor portion for engagement with an inside edge of soffit 84 as described above. The visible face area of frieze 104 may be formed with a variety of convex or concave curves and one or more square bends. Stiffening block 95c is

positioned between frieze 104 and the structure of house 10 to reduce the chance of frieze 104 being dented or bent after installation. Frieze 104 terminates with an upwardly facing edge 108 that engages J-hook 106, assembled to house 10 in inverted orientation by fastener N. Fastener 10 may be screws, nails, or adhesive, e.g. silicone caulk material.

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Referring now to Figure 7, a portion of a roofline of a building 10 is shown in front elevation view. Fascia 112 is positioned at the forward surface of the eave with roofing material 110 above.

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Figure 7A is a cross sectional view of fascia taken in the direction of line 7A - 7A of Figure 7 configured with a first contour. Block 128a is mounted to the side of rafter 116 by adhesive or other fastener means. J-hook 118 is mounted in inverted orientation beneath block 128a. Fascia 112a is then placed with its lower end 122a engaging J-hook 118 and its upper edge 124a engaging roof sheathing 114. Upper edge 124a may optionally be affixed to sheathing 114 by means of an adhesive such as, for example, silicone caulk material. Exterior roofing material, e.g. shingles, 110 is applied last. Fascia 112a is configured to mount with edges P, Q, and R in contact with block 128a, thus affording sufficient stiffening to avoid bending or minor denting.

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Figure 7B provides a cross sectional view of a fascia 112b that differs in contour and means of support from fascia 112a of Figure 7A. Fascia 112b is configured to extend further outwardly from rafter 116 at its top portion than at its bottom portion. To accommodate this greater extension of fascia 112b, roof sheathing 114 is mounted to protrude a greater distance beyond rafter 116 than occurs in the illustration of Figure 7A. Stiffening block 128b substantially conforms to the interior dimensions of fascia 112b and is adhesively or otherwise mounted to rafter 116. Fascia 112b is mounted with its lower edge engaging inverted J-hook 118 and its upper edge 124b engaging and adhered to roof

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sheathing 114, thus supporting corners P', Q', and R' and the surfaces between. As with prior described trim products, any nails, screws, or adhesive used for mounting the trim product or a supporting J-hook or other component are positioned to be totally hidden when the siding panels or other exterior parts are installed. In this way, a finished
5 installation without visible fasteners is achieved.

Referring now to Figure 8, a side elevation view is shown of a first embodiment set of forming dies 132, 136 according to the present invention. The solid line drawing shows forming dies 132 and 136 prior to closure with sheet 130 of bendable material in position
10 with surface A painted and surface B unpainted. The dashed line drawing shows formed sheet 130' after closure of forming dies 132, 136. The lower part of the die set consists of lower die 132, having a selected contour, for example including one or more curved sections and one or more angular sections, and is substantially elongate in a direction perpendicular to the plane of the drawing. Columns 134 support base 132. Upper die 136
15 is made in a matching contour to the contour of base 132. Form 136 is supported above base 132 by ram 138. Rear lip 22, bottom return 42, and grip 44 (see Figure 2) are formed in a subsequent bending operation.

In operation, bendable sheet 130 is placed substantially flat on lower die 132 and a
20 downwardly directed force F is applied to upper die 136 through ram 128 to bend sheet 130 to become, after forming, sheet 130', shown in dashed lines. According to the desired configuration of sheet 130', different combinations and relationships of curved and angular portions create differing architectural effects.

Referring now to Figure 9, an alternate device employing base die roller 140 and
25 form die roller 144 is disclosed for the continuous formation of contours in a sheet 130 of bendable material. A cross sectional view through base die roller 140 and form die roller

144 is substantially equal to the elevation view of forming dies 132, 136 shown in Figure 8. By forming a set of dies as rollers, longer continuous lengths of formed sheet are possible than with a fixed length set of opposed dies. Base die roller 140 mounts on shaft 142 and is driven in the rotational direction indicated by arrow Y. Form die roller 144
5 mounts on shaft 146 and is driven in the rotational direction indicated by arrow Y'. Both base die roller 140 and form die roller 144 have matching areas of curvature and a number of alternating inwardly and outwardly oriented right angle bends to form a sheet of bendable material 130 similarly when die rollers 140 and 144 are brought together in the direction of arrows K and rotated and sheet 106 moves in the direction of arrow Z. As will
10 be readily understood, the result will be similar whether base die roller 140 moves up or form die roller 144 moves down, or both move toward each other. Depending on the length of sheet material supply and the length of formed sheet required, transverse cuts are made at selected intervals along the formed sheet. As noted above in respect to forming dies 132 and 136 of Figure 8, rear lip 22, bottom return 42, and grip 44 (see Figure 2) are
15 formed in a separate bending operation.

In each of the disclosed embodiments of the present invention, a sheet of material is bent to obtain a selected cross sectional profile between linear edges thereof. The architectural trim products thus formed are mounted to a building with both of the linear
20 edges in contact with a building surface and with all fasteners, e.g. nails or screws, positioned to be subsequently masked by other trim components or siding. Thus, no fasteners of the trim products of the invention are visible in the finished building.

The above detailed description of a preferred embodiment of the invention sets forth
25 the best mode contemplated by the inventor for carrying out the invention at the time of filing this application and is provided by way of example and not as a limitation. Accordingly, various modifications and variations obvious to a person of ordinary skill in the art to which it

pertains are deemed to lie within the scope and spirit of the invention as set forth in the following claims.

CLAIMS

What is claimed is:

1. An architectural trim product formed of a sheet of material that is able to retain a shape to which it is bent wherein the trim product has a cross sectional profile from a first linear edge to a second linear edge with a plurality of bends and being adapted for being mounted with the linear edges both in contact with a building surface and with no fastener visible.
2. The architectural trim product as described in claim 1, wherein at least one of the plurality of bends comprises a concave curve.
3. The architectural trim product as described in claim 1, wherein at least one of the plurality of bends comprises a convex curve.
4. The architectural trim product as described in claim 1, wherein at least one of the plurality of bends comprises a concave curve, and a second of the plurality of bends comprises a convex curve.
5. The architectural trim product as described in claim 1, wherein the sheet material is metal.
6. The architectural trim product as described in claim 1, wherein at least one surface of the sheet is painted prior to being bent.
7. The architectural trim product as described in claim 5, wherein the sheet is aluminum.

8. The architectural trim product as described in claim 5, wherein at least one surface of the sheet is painted prior to being bent.

5 9. The architectural trim product as described in claim 7, wherein at least one surface of the sheet is painted prior to being bent.

10. An architectural trim product formed of a sheet material that is able to retain a shape to which it is bent wherein the product has a cross sectional profile with at least one curved portion and at least one right angle bend and comprising a first panel of said formed sheet material being assembled in perpendicular relation at each end thereof to second and third panels of the formed sheet material to provide a three dimensional trim product having an open portion adapted for being mounted with first and second linear edges thereof in contact with a building surface.

15 11. The architectural trim product as described in claim 10, wherein the sheet material is metal.

20 12. An architectural trim product formed of a sheet material that is able to retain a shape to which it is bent for mounting to a mounting member adapted for being mounted to a surface and having a top and a bottom and wherein the trim product is sized to engage the mounting member and further comprising a grip portion that is formed to grippingly hold to the mounting member.

25 13. The architectural trim product as described in claim 12, further comprising a second grip portion formed to grippingly hold to the mounting member.

14. The architectural trim product as described in claim 12, wherein the grip portion comprises an edge of the trim product biased to engage the mounting member.
15. An architectural trim product formed of a sheet material that is able to retain a shape to which it is bent for mounting to a mounting member adapted for being mounted to a surface such that an upper end thereof and a lower end thereof remain slightly separated from the surface and wherein the trim product comprises an upper hook and a lower hook adapted to engage the upper and lower ends of the mounting member for being securely mounted to the surface thereby.
16. A method for mounting to a building component an architectural trim product formed of a sheet of material that is able to retain a shape to which it is bent, wherein the trim product has an upper edge and a lower edge, the method comprising:
- (a) providing a bolster configured for engaging rear portions of the trim product;
 - (b) mounting the bolster at a selected position to the building component with fastening means that will be hidden from view by subsequent visible building exterior components mounted thereto; and
 - (c) mounting the trim product to the bolster without visible fastening means.
17. The method for mounting an architectural trim product as claimed in claim 16, wherein the bolster is formed of sheet material.
18. The method for mounting an architectural trim product as claimed in claim 16 where the bolster is formed of molded material.

19. The method for mounting an architectural trim product as claimed in claim 16, wherein at least one portion of the trim product is affixed to the building component by means of a J-hook.
- 5 20. The method for mounting an architectural trim product as claimed in claim 19, further comprising the step of affixing the J-hook to the mounting member by fastening means.

ABSTRACT

5 An architectural trim product formed of a metal sheet material that is bent to a selected profile shape by the interaction of mating contoured die surfaces. The product has a first end that engages first edge of a mounting member and a second end that engages the opposite edge of the mounting member. The second end of the trim product includes a bent edge that grips the mounting member to securely hold thereto. The fasteners used to affix the mounting member to the building structure are subsequently covered so that no trim product fasteners remain visible.

FIG. 1

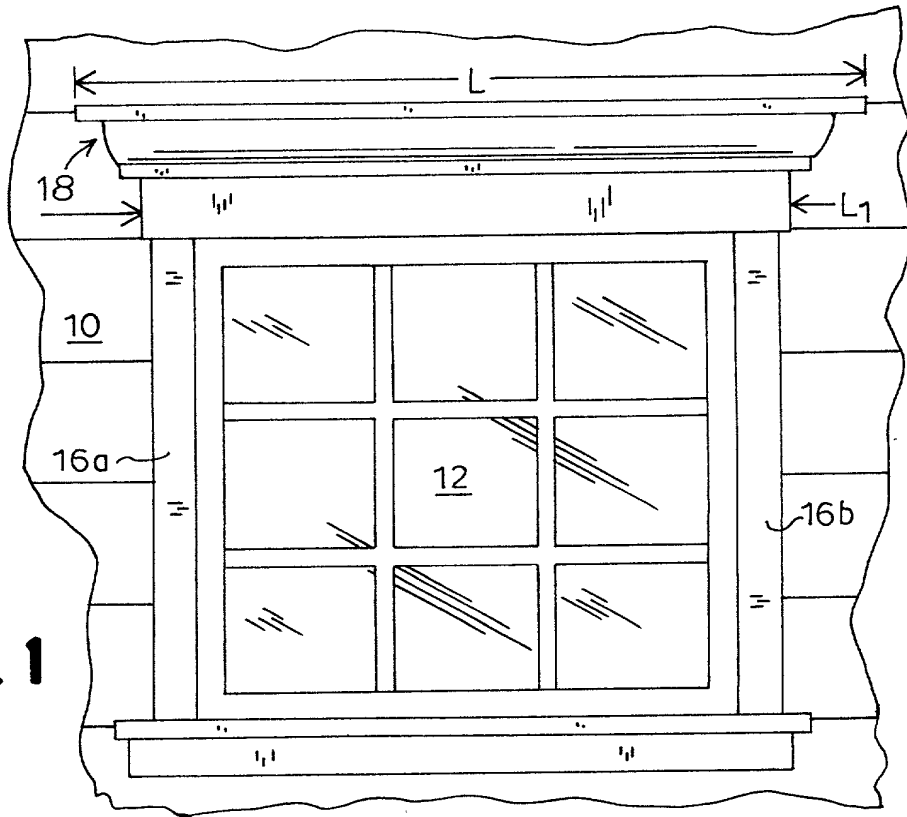
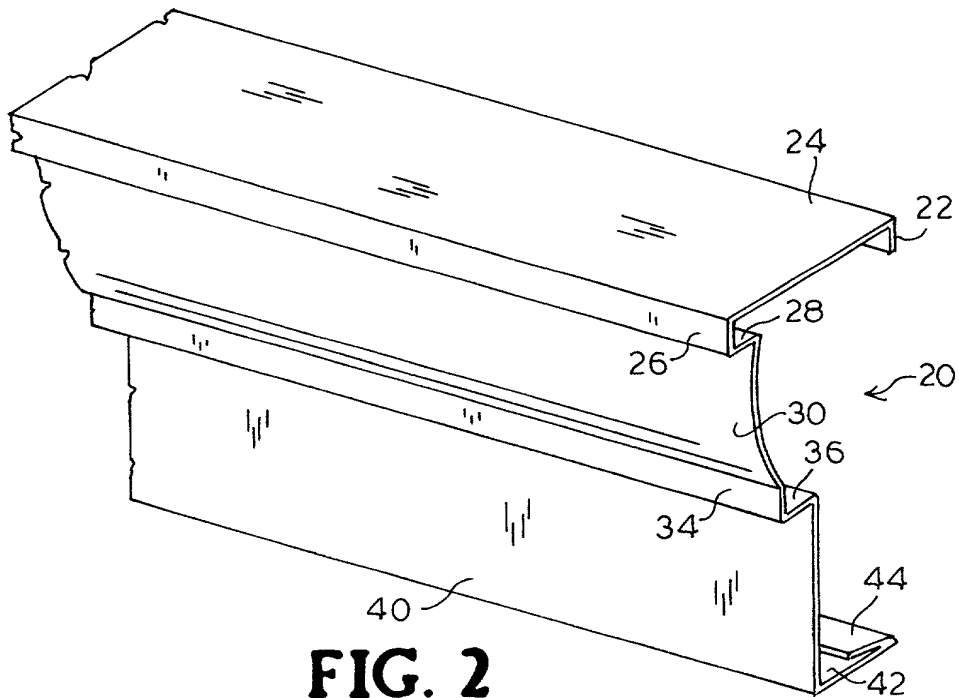
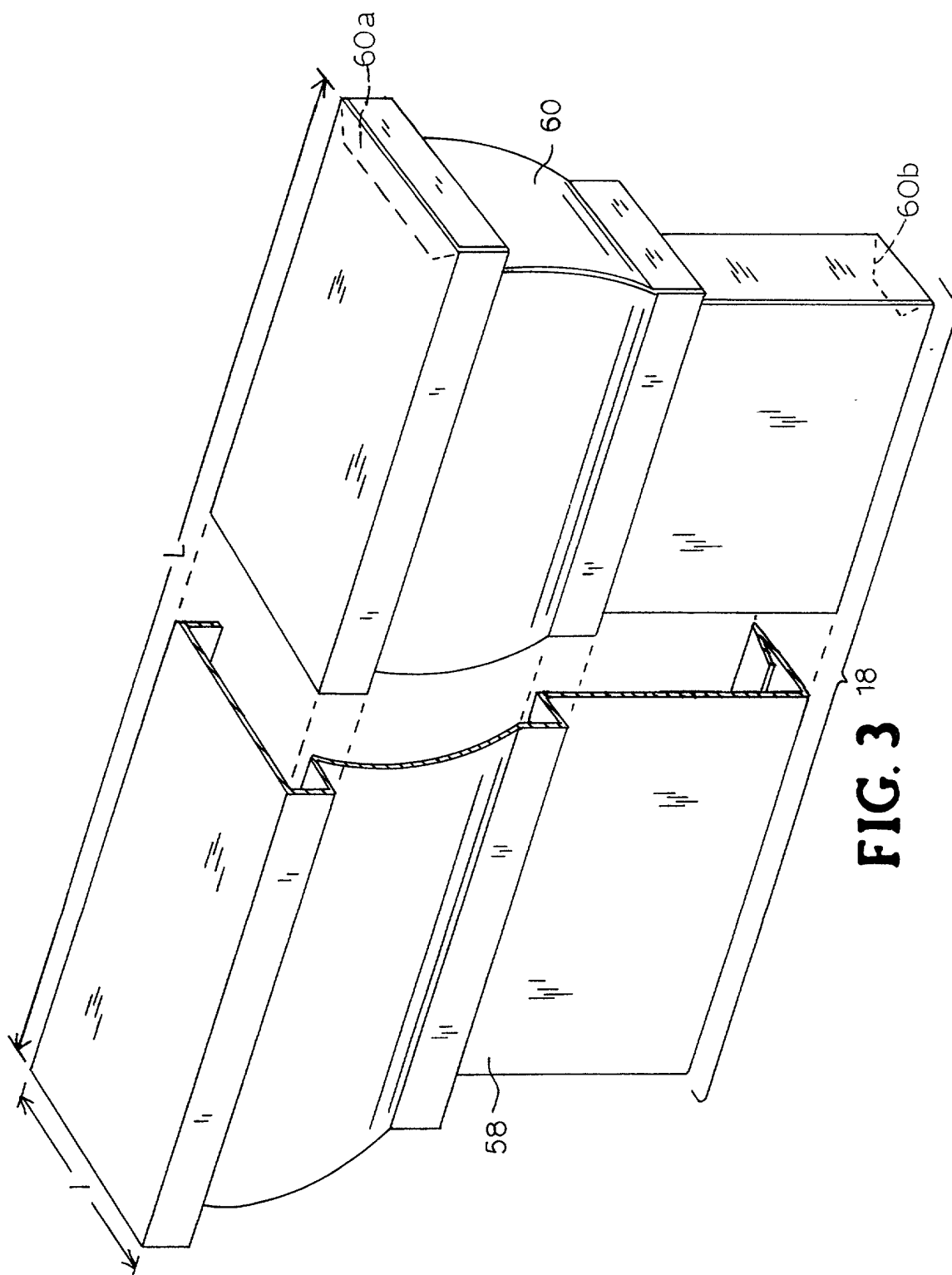


FIG. 2





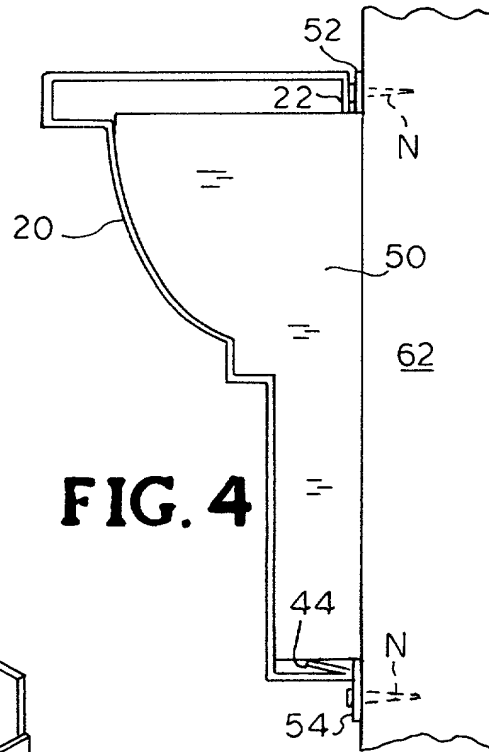


FIG. 4

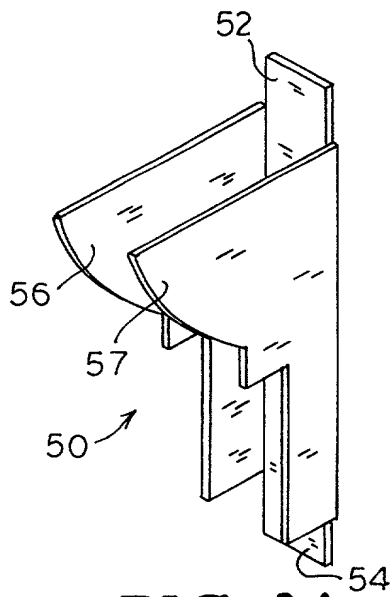


FIG. 4A

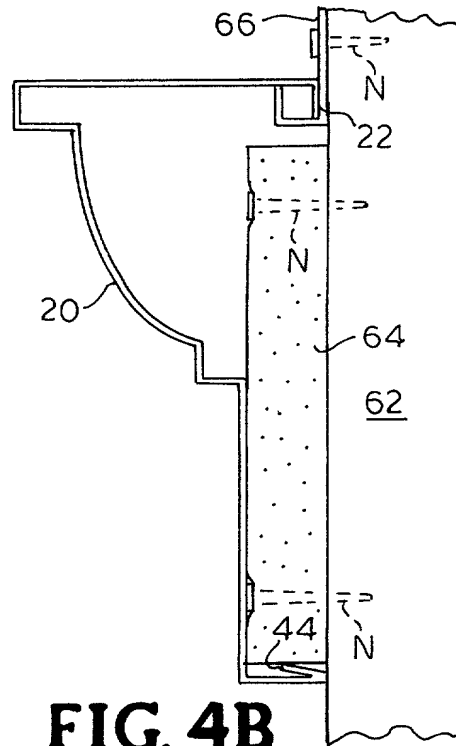


FIG. 4B

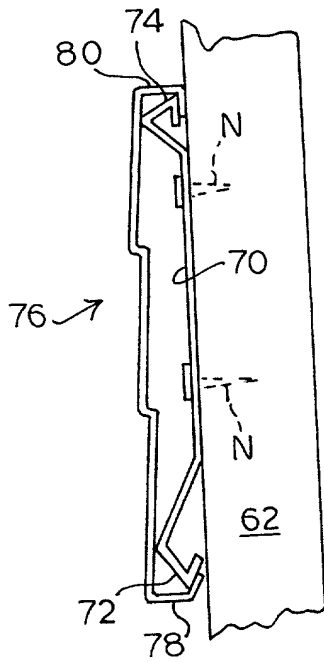


FIG. 5

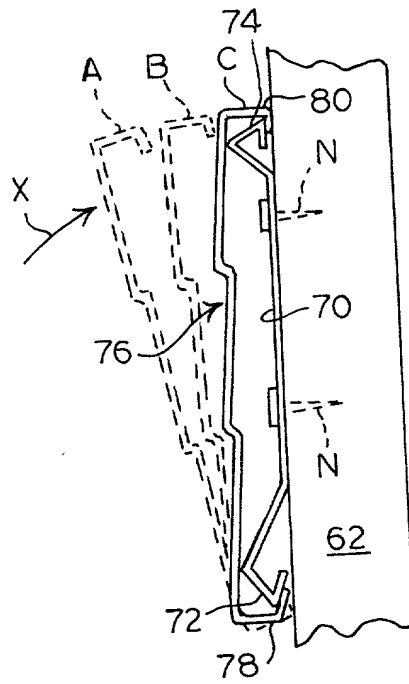


FIG. 5A

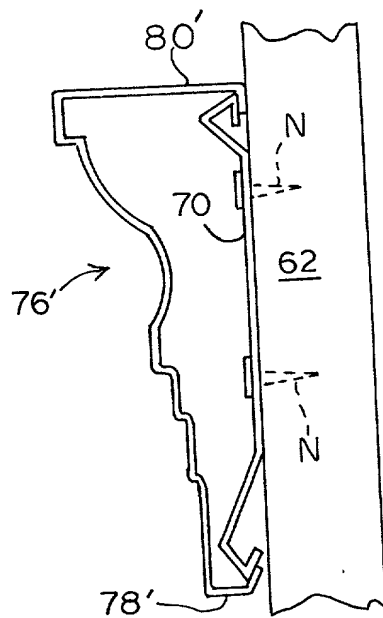


FIG. 5B

FIG. 6

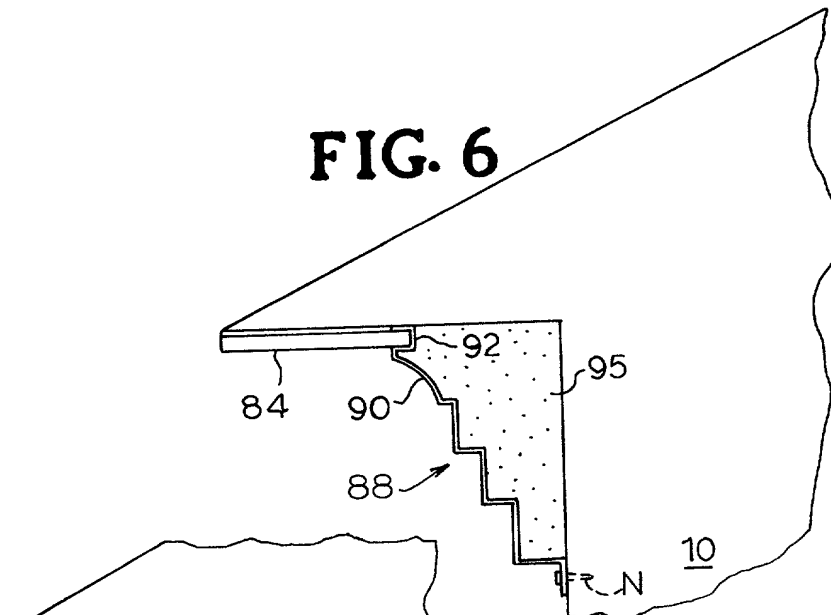


FIG. 6C

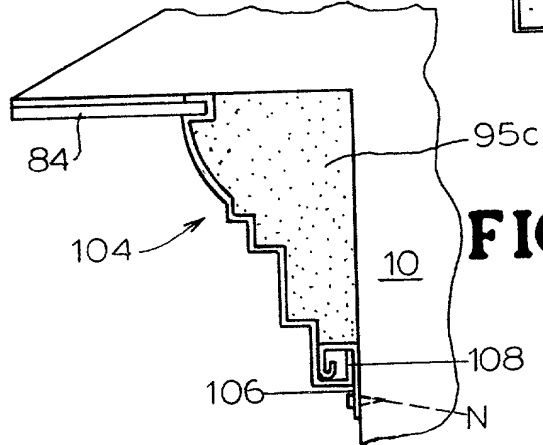


FIG. 6A

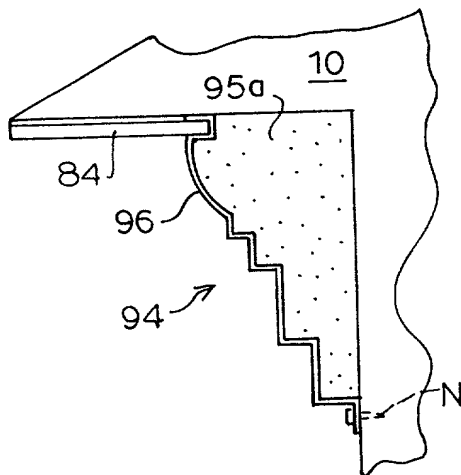
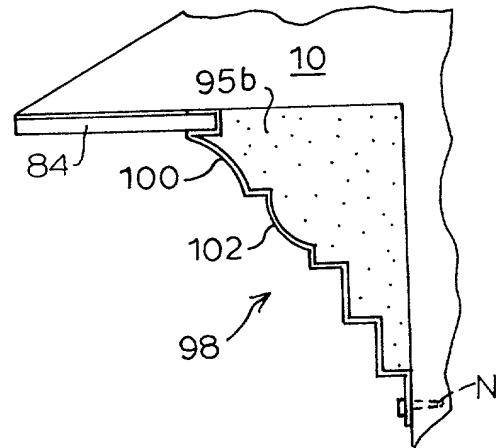


FIG. 6B



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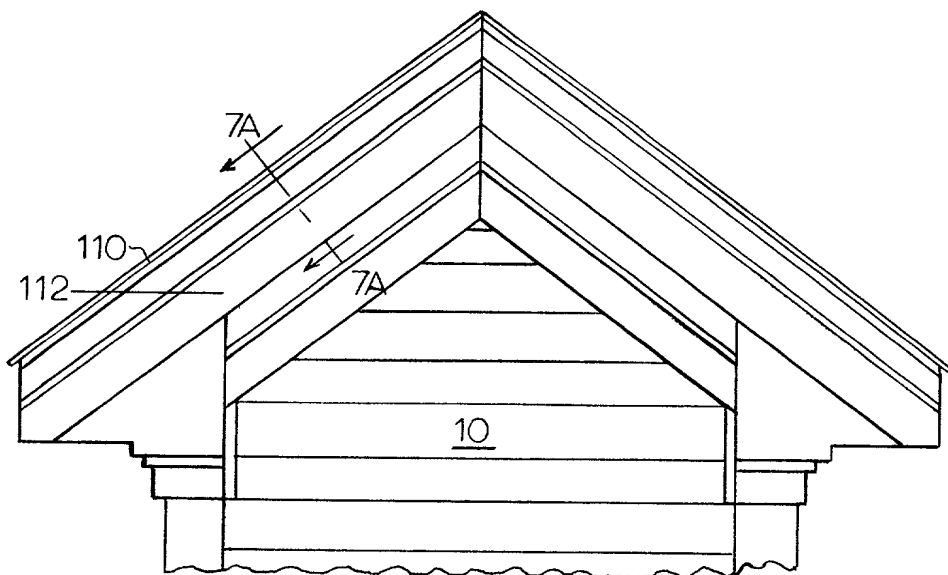


FIG. 7

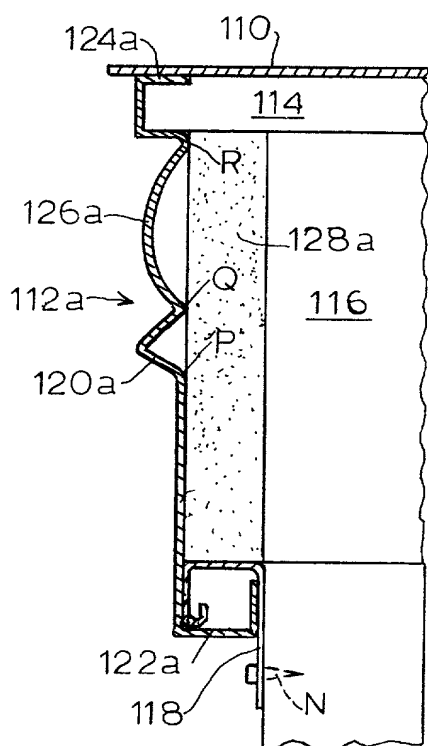


FIG. 7A

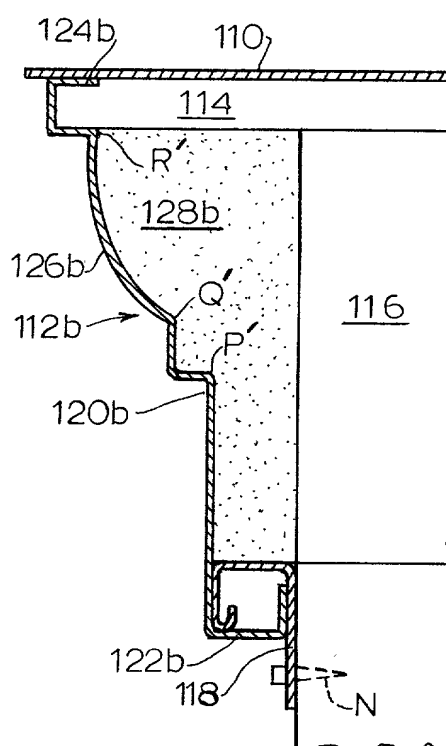
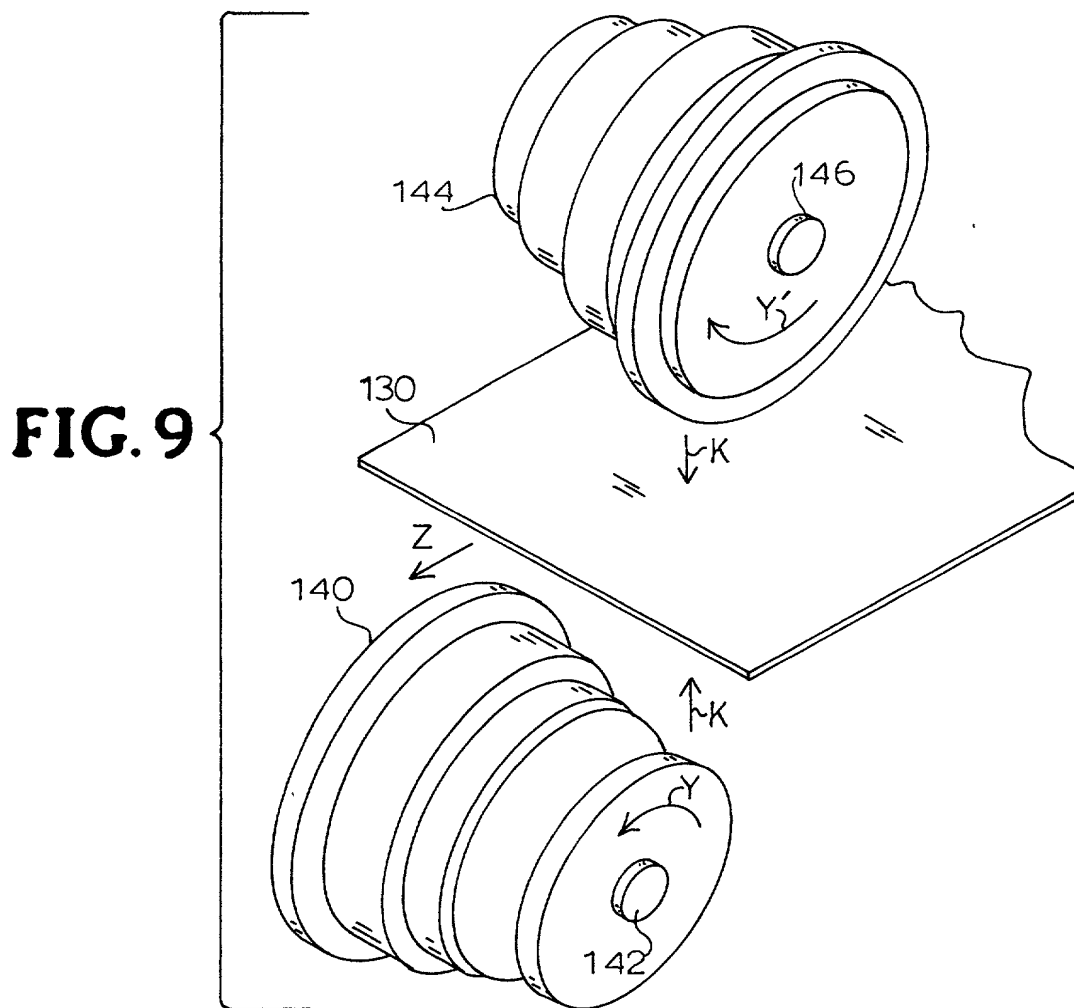
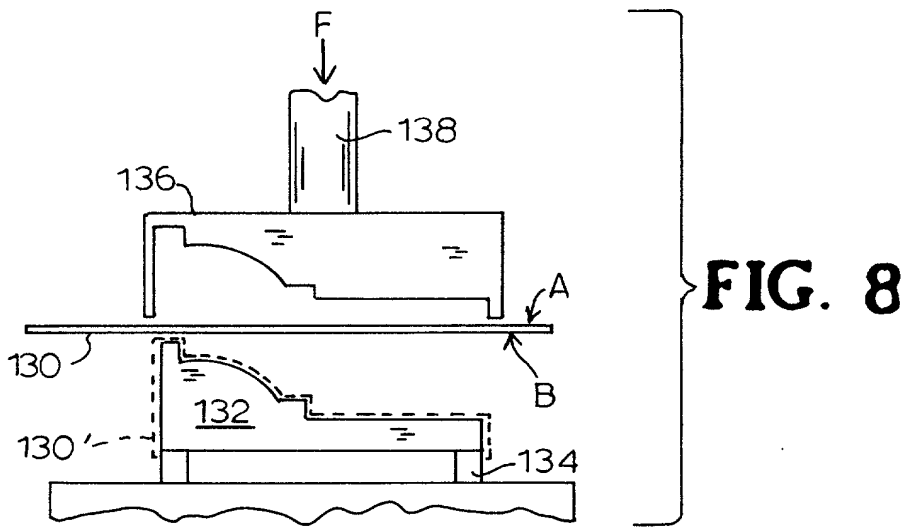


FIG. 7B



Docket No.
KEPM5001MP

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

ARCHITECTURAL TRIM PRODUCT AND METHOD OF MAKING

the specification of which

(check one)

☒ is attached hereto.

☐ was filed on _____ as United States Application No. or PCT International Application Number _____ and was amended on _____

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)			Priority Not Claimed
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/>
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/>
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/>

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

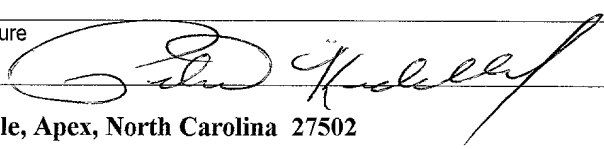
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Sole or first inventor's signature		11/16/00 Date
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Citizenship	USA	
Post Office Address	4709 Coral Berry Circle, Apex, North Carolina 27502	

Full name of second inventor, if any	
Second inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

POWER OF ATTORNEY FROM ASSIGNEE

The undersigned executes this document as a duly authorized representative of the below named Assignee of the entire right, title and interest of the invention and patent application entitled "Architectural Trim Product And Method Of Making", the specification of which:

XX is attached hereto.

_____ was filed on _____, as Application Serial No. _____.

The right, title and interest was assigned to the Assignee in an Assignment dated 11/16/00, and which:

XX is attached hereto.

_____ was recorded in the Patent and Trademark Office at reel/frame _____.

The Assignee hereby appoints the following attorneys and agents to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, said persons having full power of substitution and revocation:

B. B. Olive, Registration No. 18,267

Michael R. Philips, Registration No. 34,407

Edward V. Charbonneau, Registration No. 35,478

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Apex, North Carolina 27502

By: Peter M. Keddell
Name

President
Title


Signature

11/16/00
Date